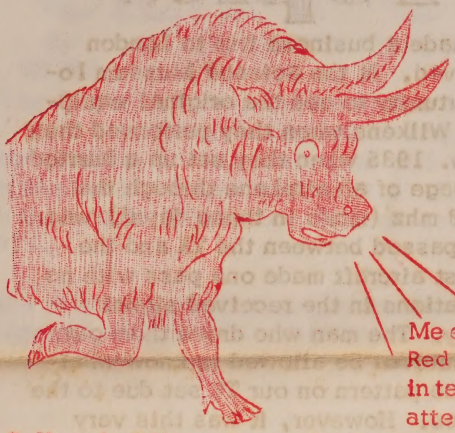
JAN. VOL.6 1975 No.2

San Antonio Radio Club BULL-ETIN



President - Bill Way WA5QHG
Vice Pres. - Clay Laster W5ZPV
Secretary - Larry Humlicek WA5PAF
Treasurer - Frank Box WA5VFM
Sgt-at-Arms - Michael Rittimann WN5GAI

Meets first and third Fridays at 7:30 P.M. at the Red Cross Building, 90 Brees St. ALL who have an interest in amateur radio are cordially invited to attend.

Bull-etin Editor, Dean Davis W5BGE Asst. Ed., Maybelle Davis
Circulation Mgr., Bob Via WB5FDT

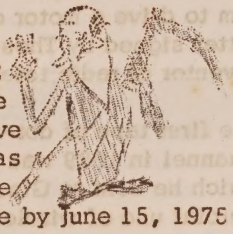
Full permission is granted for reprinting articles appearing in the BULL-ETIN provided credit line is given to the San Antonio Radio Club BULL-ETIN and, in reprinting, to the author and publication from which the original article was taken.

Letters to the editor should be addressed to 1518 Santa Anna, San Antonio, Texas 78201.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

By The WAY

By WA5QHG Bill Way



In behalf of the officers of SARC, we wish all of you a happy and prosperous New Year. 1975 should be a challenge to us due to the proposed FCC Docket 20282 A copy of this docket is included in this Bull-etin. The "Restructuring" Docket is pretty much just that and, few if any active amateurs would fail to feel its influence if it were to go into effect as proposed. Carefull study should be made! Club discussions will be set for future meetings. Remember your reply to FCC should be made by June 15, 1975

January is an important month to our Club, for we have the opportunity to participate in the ARRL sponsored

SIMULATED EMERGENCY TEST, JAN. 25-26.

Here is your chance to practice traffic handling and emergency preparations and see our Club Station W5SC in operation under emergency conditions. Frank Gerwitz W5QMH, Bexar County Emergency Coordinator, assisted by Ivan Mangold WA5RNV and Corky WB5CIT Sarvis. This operation will begin at 2 p.m. Sat. Jan. 25--so volunteer your services to Frank, Ivan and Corky. Work on your message preparation and emergency equipment and be prepared to participate. For complete details of the Simulated Emergency Test see Page 59 of December QST.

Another important meeting of SARC in January will be held on the 17th. This will be

OLD TIMERS' NIGHT, JANUARY 17.

This has proved a very popular and interesting meeting in the past--in fact it was so good last year that plans are being made to tape it this year! So, get the word out to all of the OT's you know and BRING them to the Jan. 17th meeting!

Other programs that have been announced by Clay W5ZPV, program chairman, are:
February--Roy Albright W5EYB will talk on Linear Amplifiers, construction & use.
March --Cliff Wareham WB5LSO will discuss Solid State VH Amplifiers.

Best Regards for the New Year, Bill W5QHG

.... .- .--. .--. -.-- -. . .-- -.-- . .- .-.

TEXAS VHF-FM SOCIETY WINTER MEETING

The San Antonio Repeater Organization will host the Winter Meeting of the Texas VHF-FM Society, Feb. 15-16, 1975, at the Sheraton Motor Inn, 1400 Austin Hyw. Dave Crouch WB5LZJ is chairman. Information on program and registration will be mailed at a later date.

Technical Topics

By W5LFM Cal Graf

During this past October, your reporter made a business trip to London where many interesting items were observed. At the Science Museum located on Kensington Road, I had an opportunity to see the original equipment used by Sir Watson-Watt and A. F. Wilkens when they performed their now famous "Daventry Experiment." It was 26 Feb. 1935 when they set up a hurried experiment to see if they couldn't observe the passage of an airplane through the beam of a radio transmitter. A BBC transmitter at 18 mhz (mc/s in those days!) was used to obtain reflections from a test aircraft as it passed between the TX and the temporary antennas set up by Watson-Watt. The test aircraft made one pass with no results but on the second pass they observed fluctuations in the received signal strength when the aircraft was 13 km (8 miles) away. The man who drove them out into the country had to remain with the car as he could not be allowed to know what they were doing. Today when we see the interference pattern on our TV set due to the passage of a local plane, we frown a bit as it passes. However, it was this very simple observation 40 years ago that helped save Britain from massive air attacks with its "radio location" equipment.

Also, at the Science Museum I visited GB2SM which was in operation so local visitors could see how amateur radio worked. Of course, they used Collins SSB equipment. There were a number of items on display of great interest to the radio man, be he young or old. One of the most impressive items was the kite used by Marconi on 12 Dec 1901 to support his antenna when he received transAtlantic signals from Cornwall, England, to St. John's Newfoundland. This is the kite you see in all encyclopedias when they describe the famous test of sending the letter "S" (three dits) across the Atlantic. Also on display was an AIEE (American Institute of Electrical Engineers) program from the Waldorf-Astoria signed by none other than Alexander Graham Bell in New York on 13 Jan 1902. I also saw the license issued to Marconi which permitted him to drive a motor car or motor cycle when he lived in London. There was also a letter signed by Thos. A. Edison which sent "Greeting to my friend Marconi, pioneer inventor of radio telegraphic communications."

The first tape of dot-dash ink tape used in the first message sent across the English Channel in 1899 was on display as well as a hand-written message by Lord Kelvin which he sent to Glascow, Scotland, from the Isle of Wight. This was the first commercial use of wireless telegraphy. And you can do all this "when you care enough to send the very best."

Technical publications available to the British radio amateur and electronic hobbyist are almost as numerous as they are in the States and have titles such as "Everyday Electronics," "Practical Wireless," and "Television." While paging through the Oct 74 issue of Television, I ran across a column titled "Long-Distance Television." Under a section labelec "Lightning Scatter Reception" were some references to this phenomena which was discussed by yours truly at a recent technical meeting of the San Antonio Radio Club. Until I scanned the article in preparation for this issue of the SARC Bull-etin, I was not aware than an article of mine had been referenced. The British article stated in part, 'The following year TV signals on ch. A2 from KPRC-TV (Houston) and KMID-TV (Midland) were received in San Antonio (200 and 300 miles respectively). Nearby lightning flashes "greatly increased the signal for the duration of each flash; there were more but weaker bursts as a result of more distant storms--most of these lasted less than a second but some lasted for many seconds." And that's what I told the SARC members!

During the Q and A session at the meeting referenced above, one of the questions asked concerned an artificial aurora. Lo and behold, Electronic Design of 20 Dec 74 provided a fine answer titled "Poff! And big reflector forms in ionosphere." The article states in part that DOD scientists have for several years been creating instantaneous giant reflectors in the ionosphere. With the artificial reflector, signals can be propagated several thousand miles. The "communications relay satellite" is an aurora that the scientists create by beaming rf energy from a ground-based transmitter straight up to the ionosphere. They can dissolve the aurora instantly by turning the transmitter off. No trace of the phenomenon is left--no ecological pollution of any kind. The reflector is 100 miles in diameter and 10 miles thick and can't be seen with the naked eye but it can be photographed with an infrared camera. The ground based transmitter puts out 2-million watts and with antenna gain has an effective radiated power (ERP) of 20- to 30- million watts. 73, Cal Graf W5LFM.

CLAY COMMENTS

By W5ZPV
Clay Laster

A FREQUENCY COUNTER FOR THE HAM STATION - PART I

In our previous article in the San Antonio Radio Club BULL-ETIN, we described a typical frequency counter that could be constructed for the ham station. In this issue, we will describe the precision frequency oscillator to be used in the frequency counter. Most of the circuits for the counter are described in the article "Thirty Dollar Counter", by Ralph V. Anderson, KØNL, QST, January, 1974.

The precision oscillator circuit uses a 1.0 mHz quartz crystal and a TTL SN7490 integrated circuit chip. Dual input gates A and B form the oscillator circuit while gates C and D act as buffers. (See Figure 1.) The output of gate C is used to input into the frequency counter count-down circuits. (These circuits will be described in the next article.) The output of gate D is used as a test point. It can be applied to the input of an HF receiver tuned to WWV so that the oscillator circuit can be adjusted to a precise frequency. Note: C-1 is adjusted to produce a zero beat frequency when the receiver is tuned to WWV at 5, 10, or 15 mHz. The TTL IC chip is available from mail order houses such as PolyPacs or from local Radio Shack stores. The 1.0 mHz crystal can be salvaged from a surplus frequency meter such as the BC-221 or LM series. I used a surplus crystal from the LM set. This requires an octal tube base for mounting. If a surplus crystal is not available, prescribe 1.0 mHz crystals are available from commercial companies such as Savor Electronics or International Crystal Mfg. Co.

Construction of this 1.0 mHz Oscillator is straight forward with no unusual circuit layout requirements. A printed circuit board layout is given in Figure 2.

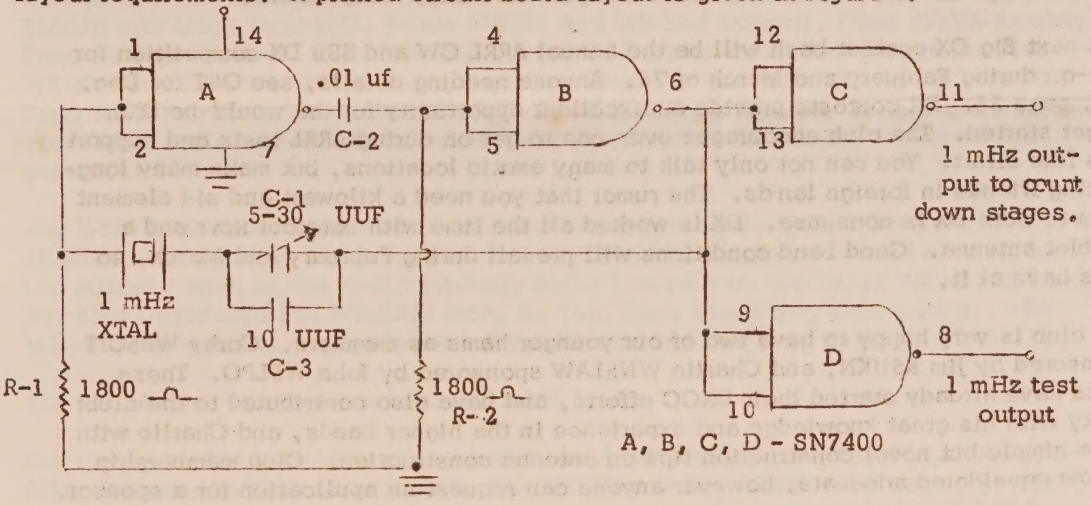


Figure 1 - Schematic of 1.0 mHz Oscillator and Buffer Stages

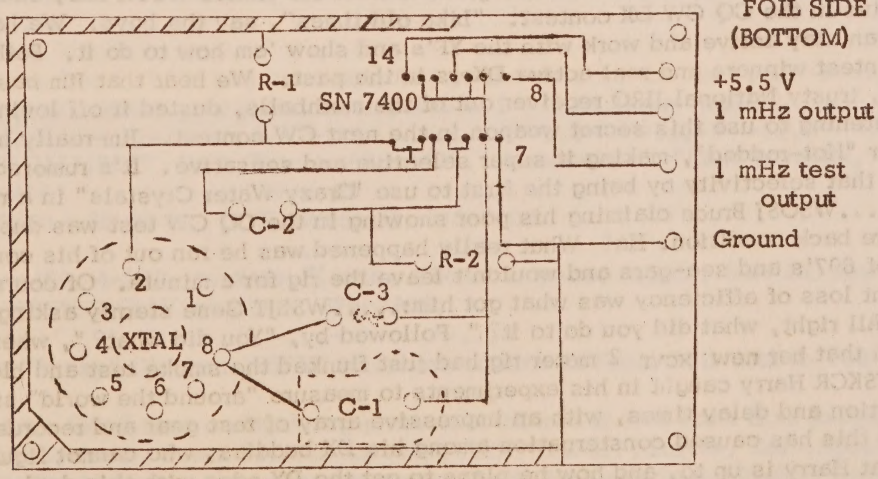


Figure 2 - Printed Circuit Card Layout for 1.0 mHz crystal Oscillator & Buffer Stages

Alamo DX Amigos

By W5LPO John Shean

The Alamo DX Amigos got off to a running start on its plans to participate in the annual DX competitions, by scoring for the CQ Magazine DX contests in October and November 74. Total club scores were, for SSB 450,576 points, and for CW 261,300 points. Not bad for the club's first go at contest operations. Scores for contributing members were: SSB Contest: W5OSJ Bruce - 146,944; W5BE Les - 90,376; W5LPO John - 90,224; W5KCR Harry - 66,420; K5TSR Bill - 43, 320; W5EDX Frank - 13,578. CW Contest: K5TSR Bill - 195,003; W5OSJ Bruce - 66,297. (No others reported.)

All the gang are quire proud of their achievements in the scores they have made for the ARRL DXCC (Century Club) award. ARRL presents a beautiful gold bond type certificate to anyone presenting proof of 100 contacts with foreign countries. From 100 to over 300 countries, DXCC holders are presented stickers to go on their certificates. This year many of the club members have gained quite a few "new ones" with the help of the club's tip-off system for rare station activity alerts. The 1974 year-end standings of members reporting are: W5UX*, 343; W5EJT*, 330; W5EDX, 292; W5LPO, 278; K5UKN, 258; W5JC, 233; K5TSR, 230; W5BE, 230; W5KCR, 218; W5OSJ, 204; W5OSH, 203; WB5CIT, 32; WN5LAW, 10. (* ARRL Honor Roll DXCC.)

DX conditions during November and December were outstanding, with the 21 Mhz band being champ--closely followed by the 14 Mhz band. Good ole 28 Mhz band was popping in and out with no predictability, but generally unsatisfactory. Some of the goodies that were workable by the alert DXer were:ZM7AH, in the rate Tokelaus Islands belonging to New Zealand; FWØDX, on from rare Wallis Island in French Oceania (not active for over 6 years); ZL1AA/C on tiny Chatham Island belonging to New Zealand, operated by two New Zealand YL ops; and many, many others.

The next Big DX contest bash will be the annual ARRL CW and SSB DX competition for 75--on during February and March of '75. Anyone needing details, see QST for Dec. '74, page 56. DX contests provide an excellent opportunity for the would-be DXer to get started. The club encourages everyone to get on during ARRL tests and support this fine effort. You can not only talk to many exotic locations, but make many long-lasting friends in foreign lands. The rumor that you need a kilowatt and six element bean to work DX is nonsense. DX is worked all the time with barefoot xcvr and a doublet antenna. Good band conditions will prevail during February and March, so let's have at it.

The club is very happy to have two of our younger hams as members. Corky WB5CIT sponsored by Jim K5UKN, and Charlie WN5LAW sponsored by John W5LPO. These gents have already started their DXCC efforts, and have also contributed to the club: Corky with his great knowledge and experience in the higher bands, and Charlie with some simple but novel construction tips on antenna construction. Club membership is now considered adequate, however anyone can request an application for a sponsor.

HEARD IN THE PILE-UPS--It was sure great to hear ole timers W5UX Bob, and W5JC Jim active in the CQ CW DX contest. "Like old times", say the boys. We hope these gents can stay active and work with the YF's and show 'em how to do it. Both are past contest winners and real active DXers in the past. We hear that Jim has taken his old, trusty National HRO receiver out of the mothballs, dusted it off lovingly, and is threatening to use this secret weapon in the next CW contest. Jim really had this receiver "Hot-rodded", making it super selective and sensative. It's rumored that Jim got that selectivity by being the first to use "Crazy Water Crystals" in a receiver filter.....W5OSJ Bruce claiming his poor showing in the CQ CW test was due to a real sore back condition. Ha! What really happened was he ran out of his contest larder of 807's and see-gars and wouldn't leave the rig for a minute. Of course, the resultant loss of efficiency was what got him:.....W5EJT Gene sternly asking Xyl, Ruth, "All right, what did you do to it? " Followed by, "You did what? ", when she told him that her new xcvr 2 meter rig had just flunked the smoke test and blew up; .....W5KCR Harry caught in his experiments to measure "around the world" signal propagation and delay times, with an impressive array of test gear and recorders. Word of this has caused consternation among his DX buddies, who cannot figure out just what Harry is up to, and how he plans to get the DX edge with this deal..... K5TSR Bill now classified as the world's worst planner. Seems he got his wires crossed and scheduled the arrival of ye ole stork to coincide exactly with the start of the CQ SSB DX contest. We learned later that while pacing the halls of the hospital,

Bill was seen eye-balling their diathermy machine, and overheard muttering, "Wonder if I could get this thing to load up on 14 Mhz? ";.....K5UKN Jim won't crystal his 2-meter rig on the club channel 49 because he is too lazy to take that great big heavy (little ole) box in and out of the car. In view of this, one club wag is reported to be making a 186 foot long mike/spkr extension cord to give Jim for Christmas....W5BE Les qualified as the undisputed champion of keeping Murphy's Law in business. He had rig troubles and antenna troubles before contest time and even had a brand new T4XC not work right out of the box. Then to top things, he got a house full of relatives visiting him for a couple of weeks right at contest time.....WB5CIT Corky overhezrd trying to convince W5EYB that ARRL should add the 420 Mhz band to the ARRL DX contest bands..... WN5LAW Charlie showing up t the W5LPO shack for a "how to" demonstration of contest operating. He listened a few minutes to the mahem, blinked twice, excused himself--and took off to parts unknown. Guess the shock was too much for him.

The Alamo DX Amigos wish all the SARC members the very best for the New Year and much DX, Amigos. 73, John W5LPO.

-...- -...- -...- -...- -...- -...- -...- -...-

PARTY REPORT

The annual Christmas Party of the SARC held Nov. 30 at Arden Grove Party House wa by far the largest ever! Some 130 were there. The new location was acclaimed by all who attended. The food was good and the music excellent!

Out-of-towners included: From Houston: Monte Montemayor W5YZ and his son, Mike Ed WB5AMN and Cathy Stoessel, Ken W5UGE and Susan Goodwin; From Austin: Duke K5GDH and Aldon Campbell, Julius W5GEL and Mildred Donnell, Doug K5YHX Brooke; From College Station: Mike WA5TKC and Jeanie Durbin; From New Braunfels: Dick WA5KYX and Jane WA5JFZ Eastman; From Los Fresnos: Sue WB5CUR and Bill WA5YXS Rich; From Port Neches: Walter WA5OCV and Hazel Rugh Murphy; From Seguin: Marvin W5FFG and Susie WA5UFL Soefge; From San Marcos: Earl K5YNS Williams with guests.

Roy W5EYB Albright, ARRL West Gulf Director, talked to the group about our responsibilities as amateurs and presented to Larry W5QMU Higgins an award of merit for his dilligent work on the Texas Intercity Relay System with the Texas VHF-FM Society. Roy also introduced Sue WB5CUR Rich, S. Tex. Sec. Emergency Coordinator , who talked on emergency preparedness and the Simulated Emergency Test.

The 2M xceiver was the won by Ruth K5OPT Jank.

Our thanks to Bill WA5QHG, Clay W5ZPV, Larry WA5PAF, Frank WA5VFM, Ivan WA5-RNV, Frances W5KQG, Gene W5EJT, Bob W5PKK and Roy W5EYB--all helped in ticket sales. Our thanks also to the decoration committee, which was ably headed up by Chris WN5LKQ James, assisted by Hazel Albright, Virginia Box, Peggy WA5GZO, and Maybelle Davis.

Saturday, December 6, 1975 has been selected as the date for the next one--same place, same time. Make your reservations N O W ! de Dean W5BGE.

-...- -...- -...- -...- -...- -...- -...- -...-

NEED TOWER CLIMBER? Call Charlie 696-0421. Reasonable. "Have harness, will travel!"

-...- -...-

WANTED TOWER - 20-40 ft. J. D. WB5MXJ, 673-7109.

-...- -...-

FOR SALE - 4-400. 4-250, sockets, rack, HW-32 w/power supply, 3 kv DC power supply. WB5LSO Cliff Wareham, 674-2669.

-...- -...-

CHANGE Ken "Fuzzy" Clapham W5FZN telephone number in Sept. Bull-etin to 736-331

-...- -...-

FROM hrReport - Good dope on lightning protection offered in free book from Joslyn Electronics Systems, Santa Barbara Research Park, Box 817,Goleta, Cal.,93017. Written by David Bodle, Electrical Protection Guide for Land-Based Radio Facilities should be studied carefully by every amateur.

-...- -...-

SILENT KEY - HANK FISHER W5RDR passed away Sat. Dec. 28, 1974.

NEWS, AND VIEWS, FROM THE ARRL DIRECTOR, WEST GULF DIVISION

It is a privilege to have again been invited by your editor to use a portion of this bulletin to bring some news of ARRL activities, and express some viewpoints from the Director perspective.

MESSAGE TRAFFIC

In analyzing activities of the field organization we find that during calendar year 1974 QST shows a total of 49,766 formal messages were handled by reporting stations in this division! Of this total, 7853 were processed in Oklahoma, 13,459 in North Texas, and 28,454 in South Texas.

Leading traffic stations were:

Oklahoma	-		W5RB	(1680 msgs)
North Texas	-		W5TI	(2270 ")
South Texas	-	(K1ONW/5)	W5UGE	(3806 ").

SATELLITES

Oscar 6 continues to function. Oscar 7 achieved a perfect launch and orbit on Friday, November 15. We note that interest in operating through the satellites continues to grow. Old Timers Leroy May, W5AJG (Dallas), Pat Patterson, W5VY, and Irv Seligmann, W5UB (Pappy) of San Antonio are among the earlier amateurs to make contacts through the new satellite. Irv has tentatively agreed to conduct a demonstration of satellite operation at his QTH. It is recommended this be coordinated by Clay Laster, our program director, in order to minimize any great demand on Irv's time. (Ol' Pappy retired some time ago from his consulting engineering profession and now teaches political science at Our Lady of the Lake College).

VHF NEWS

Ed Tilton, W1HDQ, long-time VHF contributor to QST is back in harness as editor of the column World Above 50 Mhz.

Six Meter SSB continues to interest a great number of amateurs. SMIRK (Six Meter International Radio Klub) with headquarters in San Antonio, now reports over 600 members. Interested persons should contact Ray Clark, K5ZMS, 512 674 5781 for details concerning the organization and its activities.

DX

A note from K5FVA reminds us of his appointment to the ARRL DX Advisory Committee. Louie requests input on DX issues so that he can efficiently represent us in that phase of amateur radio. Comments may be addressed directly to Louie if desired. In some instances it might be advantageous to filter them through the local DX club (Alamo DX Amigos). Louie's address is:

Louis A. Muhleisen, Jr., K5FVA
2929 Metairie Road,
Metairie,
Louisiana, 70001

LEAGUE PUBLICATIONS

The San Antonio Radio Club is to be complimented for its action in purchasing and donating a complete set of league publications to each of the 9 branches of the San Antonio Public Library system.

VHF FM REPEATER NEWS

We note that Howard Lester, W2ODC, Chairman, and George Munsch, W5VPQ, have completed their constitutional terms of service on the ARRL Repeater Advisory Committee.

Both these highly knowledgeable gentlemen served with great distinction during the trying period when we were attempting to get the infamous Docket 18803 modified. To them belongs great credit for having made the regulations more palatable.

(cont'd)

Dick Flanagan, W6OLD, and Jack Mason, W5NSQ, have been appointed by ARRL President Dannals as their successors. Dick was very active in repeater work in Ø-land prior to moving to California. W5NSQ is the well-known president of the Texas VHF-FM Society and holds a high level position with Collins Radio Company.

MARS

With mixed emotions we recently attended the retirement ceremony of Mr. Roland Belk, W5LLS, Director, Central Region Army MARS.

A close friend for almost 40 years, Roland has done a magnificent job as MARS director and has consistently actively supported ARRL. He will continue as ARRL Assistant Director advisor for Army MARS affairs.

RESTRUCTURING

Once again, amateur radio operators find themselves on the horns of a dilemma with publication of the amateur license restructuring docket by FCC.

According to the Commission, this docket is being promulgated because of some 35 petitions by amateurs, currently on file in the Commission offices which must be acted upon.

Upon examination, we find the docket to be not all bad, nor all good. However, one might ask, in spite of some presumed inequities which prompted the docket - "Will the overall effect of the numerous changes proposed benefit, or harm amateur radio?" "Is a major restructuring of our licensing system indicated because of petitions by 35 individuals out of 265,000?" And finally - "Do we actually need any changes at all at this time?"

Reaction to the docket already being received by this director leans heavily to the belief that the major thrust of the proposals is a subterfuge attempt to load the amateur bands with CBers, in order to get the monkey off the back of the FCC, and serve the profit motive of equipment manufacturers. If that concept be true, we are indeed facing a most momentous issue.

It is hoped this docket will be given careful study by all. Every amateur is affected by its contents to some degree. The future of amateur radio will be greatly affected by final action on the docket.

In my annual report, mailed to each of the other 15 directors of the league I strongly urged to league to take NO official position on the docket at our January meeting. I did recommend that our counsel seek extension of the comment date to 30 September. In event this time extension is not granted, I recommended the board hold a special meeting on 22 May, for the purpose of formulating the official league comments.

The reason for this recommendation is to provide time for solic= itation of comments from each of our league members.

It is noted the docket, as published, varies considerably in some areas from previous comments by FCC officials. Also, there is need for clarification of the proposed items. For instance, the docket proposes to limit General Class amateurs to 500 watts PEP output. How will the average amateur determine when his SB200 or Henry 2K linear amplifier is operating within this power limitation?

While there is no ITU requirement for a code test above 144 Mhz, do the great majority of our presently licensed amateurs want the 5 wpm code requirement deleted?

In consideration of our need to protect our privilege of using frequencies, and the fact that ethical standards have reached a shockingly low point, would it not be better to have all license examinations conducted by FCC or Civil Service personnel rather than by volunteer examiners?

(cont'd)

What motive would cause a person to want to be examined by a volunteer examiner, rather than by FCC or Civil Service personnel, provided examining points were widely available?

One of the reasons advanced by proponents of the 'Communicator' license is that we must have great numbers of amateurs in order to have enough political clout to protect our operating privileges. One might ask if the amateur service has deviated and deterioriated so far from the charter contained in paragraph 97.1 of FCC regulations that these principles no longer apply; and that if we wish to survive we now must appeal to our ward politicians for favors. If this is to be the procedure then why not abolish the Amateur & Citizens Division of FCC and work directly with our congressional representatives on all matters affecting amateur radio?

It is being offered that the Communicator license is necessary to offset the decline in amateur radio numbers. This director is of the opinion other measures, more in keeping with the high standards of amateur history can be just as effective. The fact is, we have made no concealed attempt to lure newcomers into amateur radio. Most certainly anyone who has been working 75, 40, or 20 meters recently would suggest we first find a place to put them, before loading those bands with newcomers in great numbers. And, without additional frequencies, the predicted hordes of newcomers would be sentenced to a lifetime of operating on VHF, with no opportunity to use HF.

The above, and many other questions must be resolved before we of the amateur body are prepared to formulate a concerted opinion.

All ARRL members in this division can expect to receive a newsletter from me on this subject in late January, or early February, the replies to which I will use to determine the stance I must assume as your representative.

There is no great rush. The final comment date is 16 June, 1975.

73, Roy

ROY L. ALBRIGHT, W 5 E Y B
Director.

San Antonio Radio Club
P.O. Box 62
San Antonio, Texas 78291
Address Correction Requested.

Nonprofit Organization
U.S. POSTAGE
PAID
San Antonio, Texas
Permit No. 2886

83
George Munsch
11314 Janet Loop
San Antonio, TX 78230